

Some New Isopod Parasites on Fishes

BY

D. V. BAL AND U. N. JOSHI

Department of Zoology, Institute of Science, Bombay

(With two plates)

INTRODUCTION

In a preliminary investigation on the Isopod fauna of Bombay, the presence of three new species of parasitic Isopods was noted. A detailed description of their morphological features with suitable illustrations is given below.

1. *Argathona murænae* sp. n.

Family: Corrallinidae.

Genus: *Argathona* Stebbing.

Host: *Muræna tessellata*.

Date: August 1956.

Collection: 9 females.

DESCRIPTION

Body ovate. Colour violet. Surface setose. Thoracic segments without any tubercles. Convex along the mid-dorsal line. Less than half as broad as long.

Cephalon and its appendages: (Pl. I, Fig. 1). The cephalon is more or less a triangular plate, though slightly broader than long. The base of the cephalon is comparatively straight while the lateral sides are broadly rounded and meet anteriorly in a very small rostral projection covering the base of the antennae. The surface of the cephalic segment is setose but not as thickly as the other body regions. Moderate eyes situated wide apart at the postero-lateral sides of the head.

Antennae (Pl. I, Figs. 2 and 3) are well developed. The first pair (Pl. I, Fig. 2) is extensible as far as the posterior margin of the first

thoracic segment. Its peduncle is well defined with three segments, and the flagellum with eleven to thirteen segments. Each segment of the flagellum carries a pencil of brush setae along the mid-anterior margin on the ventral aspect. The terminal segment, however, bears brush setae at its apex.

The second antenna (Pl. I, Fig. 3) is long and slender. It extends to the posterior margin of the third segment of the thorax. The peduncle and flagellum of the second antenna are well defined. First two joints of the peduncle are small, the third slightly longer but atrophied on the inner side, thus giving it a triangular appearance. The fourth and fifth articles are as long as the combined length of the first three articles and are more or less sub-equal to each other. The flagellum of the second antenna consists of thirty to thirty-four articles or segments. Each segment bears a thin pencil of setae on the ventral side. The terminal segment bears setae at the apex.

Mandibles (Pl. I, Fig. 4 *a* and 4 *b*) are strong, and their cutting edges thickly chitinised, retaining their brown colour even in permanent preparations. Left mandible (Fig. 4 *a*) is represented by a thin blade-like projection which is not serrate.

First maxilla (Pl. I, Fig. 5) has the outer joint strong, chitinised unguis, and a hook-like spine at the base.

Second maxilla (Pl. I, Fig. 6) is simple, short and lobe-like.

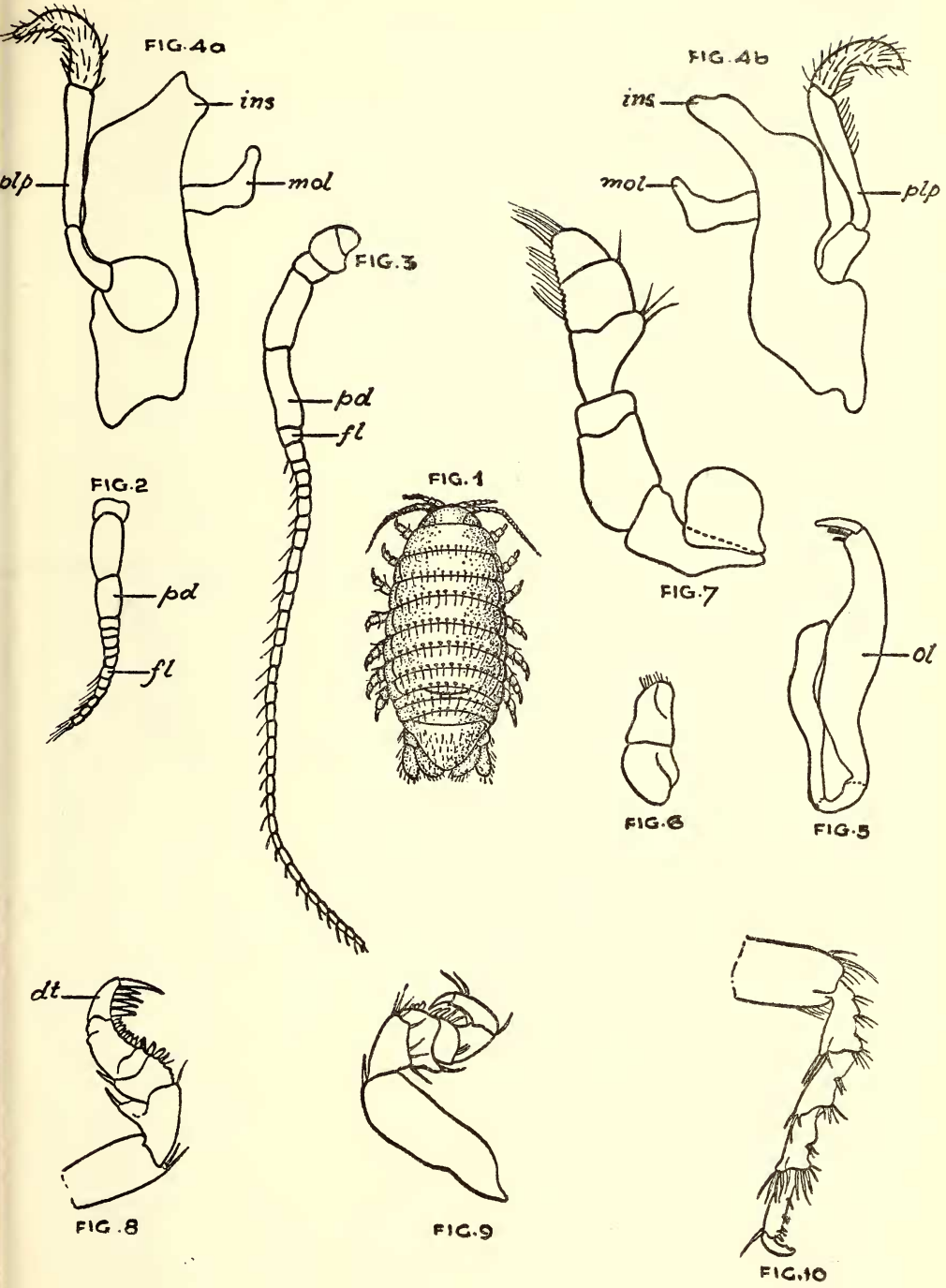
Maxillipeds (Pl. I, Fig. 7) with the last two joints setose along their inner margin towards the apex.

Thorax and its appendages: (Pl. I, Figs. 1, 8, 9, 10). Thorax is long and broad. Its surface is uniformly setose. The first thoracic segment is the longest of all. The second, third, and fourth segments are sub-equal and slightly shorter than the first. The fifth, sixth and seventh are shorter, the seventh being the shortest. The breadth of the thoracic segments goes on increasing up to the fourth thoracic segment which is broadest. Succeeding segments are slightly narrower.

Epimeral expansions of the thoracic segments are well defined, excepting those of the first one. The second and third segments have their epimera developed but not as much as in the succeeding segments.

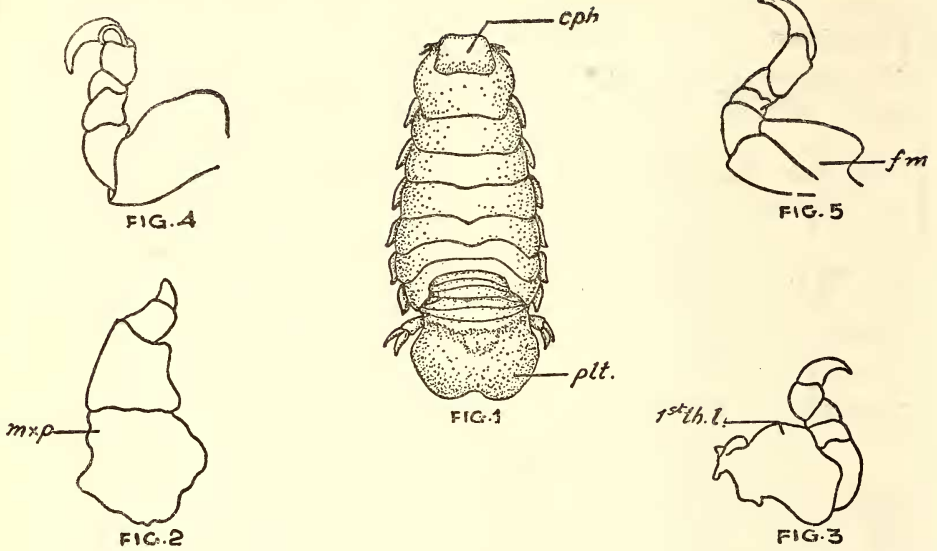
First thoracic leg exhibits a dentate dactylus on the inner side, in addition to a strong terminal spine (Pl. IV, Fig. 8). The succeeding two legs are also dentate but on a smaller scale. Others are strong and thickly setose (Pl. IV, Fig. 9).

Abdomen and its appendages: (Pl. I, Fig. 1). Due to the bent nature of the body, the first abdominal segment is totally

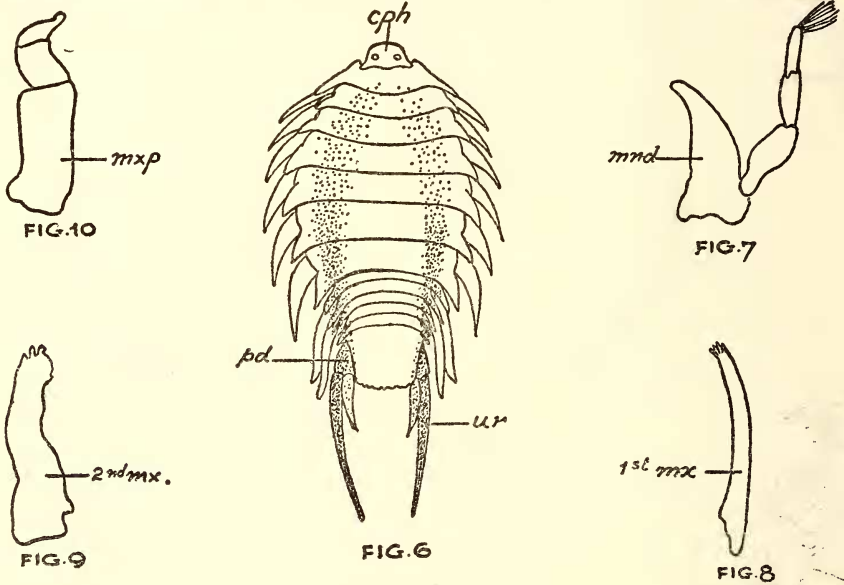


Argathona muraeneae sp. n.

Fig. 1 : Adult female. Fig. 2 : First antenna, fl—flagellum, pd—peduncle. Fig. 3 : Second antenna, fl—flagellum, pd—peduncle. Fig. 4a 4b plp—plp: Left and right mandibles, ins—incisor, mol—molar. Fig. 5 : First maxilla, ol—outer lobe. Fig. 6 : Second maxilla. Fig. 7 : Right maxilliped. Fig. 8 : First thoracic leg. Fig. 9 : Second thoracic leg. Fig. 10 : Seventh thoracic leg.



SHIRGAONKAR



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Cymothoa cinerea sp. n.

Fig. 1 : Adult female—*cph*—cephalon, *plt*—pleotelson. Fig. 2 : Maxilliped, *mxp*—maxilliped. Fig. 3 : First thoracic leg. Fig. 4 : Second thoracic leg. Fig. 5 : Seventh thoracic leg.

Nerocila pigmentata sp. n.

Fig. 6 : Adult female, *cph*—cephalon, *pd*—peduncle, *ur*—uropod. Fig. 7 : Right mandible, *mnd*—mandible. Fig. 8 : 1st *mx*—First maxilla. Fig. 9 : 2nd *mx*—Second maxilla. Fig. 10 : *mxp*—Maxilliped.

covered by the seventh segment of the thorax. Likewise, the second abdominal segment is also partially covered. The third is nearly as broad as the seventh thoracic segment. The fourth, which is equally broad, covers the fifth segment laterally. Excepting the first and the covered portion of the second, all the abdominal segments are setose.

Epimeral expansions of the abdominal segments are not defined but they can be recognised by their backward projections on the third and fourth segments.

The last abdominal (pleotelsonic) segment is bulged on each side of the mid-dorsal line in the anterior region. The telsonic region is triangular with rounded apex posteriorly. The telson is not thickly setose. The posterior margin of the telson and of the uropods is dentate with long and fine setae, sprouting out from the depression of the dentary.

REMARKS

The gills and the buccal cavity of the fish *Muraena tessellata* was found infested with the aforesaid species of isopods. Their general appearance and body colour resembled the description of *Argathona normani* (Stebbing, 1905). However, they differed from it by their apparent parasitic habitat and the non-tuberculate nature of the thoracic segments and the telson. In view of this, this species is named here as *Argathona muraeneae*.

2. *Nerocila pigmentata* sp. n.

Family: Cymothoidae.

Genus: *Nerocila* Leach.

Host: *Opithopterus turtoor* (dorsal side).

Date: May 1956.

Collection: Two ovigerous females.

DESCRIPTION

Body ovate and compact; broad (13 mm.) in the middle and broadly converging at the ends (length 21 mm.). Body colour beautiful yellow-grey. Presence of lateral dark violet bands running almost throughout the length of the body; becoming faint, sparse, and broad on the thoracic region, and deeply pigmented on the abdomen, peduncle of uropod, and its outer-ramus.

Cephalon (Pl. II, Fig. 6). Cephalon or head is broader than long and subquadrate. Its anterior margin is broadly rounded and

posterior trilobed. The median lobe is large and rounded and the side ones are small and angled. Eyes, situated in the postero-lateral angles of the head, are small. First pair of antennae does not reach the middle of the first thoracic segment and the second extends to the middle of the segment. Mandibles, maxillae and maxillipeds show the characteristic structure of the genus *Nerocila* (Richardson, 1905) (Pl. II, Figs. 8, 9, 10).

Thorax (Pl. II, Fig. 6). The length of the thorax is almost equal to its breadth at the 6th segment. First thoracic segment is $2\frac{1}{2}$ times broader than long. Its anterior margin is trisinate and posterior uniformly curved. The postero-lateral angles of this segment are very prominent and extend nearly to the posterior margin of the second segment. Epimera of the first segment are not visible. The second, third, and fourth segments are subequal in length but narrower than the first. The posterior margin of these segments is broadly rounded in a convex manner. The postero-lateral angles of the second segment are abruptly short as compared to those of the first, and gradually elongated in posterior segments. The epimeral expansions of the second segment are slender, acute, and extend almost to the posterior extremity of the third segment. Those of the third and fourth are also slender but slightly more elongated. The fifth segment of the thorax is broad and long. At the sides, it exhibits anteriorly a pair of sutures demarcating the anterior portion, from which the epimeral expansions arise. Its posterior portion extends laterally backwards, to form well-developed postero-lateral angles of the segment. The epimera of the fifth segment are well developed, with a broad base, sloping into a fine acute point, reaching the lateral sutures of the succeeding segment. The sixth and seventh segments are broad, the former being the broadest. They are also longer than the rest but are subequal. The posterior margin of the 6th segment is almost straight, and of the seventh concave. The lateral sutures of these segments are prominent. Their epimeral expansions are robust and long. Postero-lateral angles of these segments are very well developed.

The first five thoracic legs are prehensile and closely situated. The sixth is slightly posterior to the middle of the body and wide apart from the fifth. The seventh leg is also situated far off from the sixth. All the legs are similar to each other in structure but they increase in length abruptly in the posterior pairs, the seventh being the longest.

Abdomen (Pl. II, Fig. 6). The abdomen is slightly immersed in the thorax. Its five free segments are well defined. The lateral

angles of the first four segments are well developed and elongated. The epimera of the first two abdominal segments are slender, acute, elongated, reaching the distal end of the peduncle of the uropod. Epimera of the other segments are not visible. The pleotelson is more or less a rectangular plate, with its angles broadly rounded, the inner margin of which is almost straight as compared to the outer. The peduncle of uropod is distinct. The outer distal angle of the uropod is extended. Peduncle and outer ramus of the uropod are deeply coloured. Both the rami of the uropod are elongate, terete, slender, and acute. The outer ramus is double the length of the inner, and is darkly pigmented. The inner ramus has a slightly broader base.

REMARKS

The significant features like long acute arrow-like epimeral expansions of the posterior segments of the thorax, broadly rounded telson, the presence of beautiful dark violet bands on the sides on the body and the long slender uropod region make this species strikingly different from the other known species of the genus *Nerocila* (Richardson, 1905; Barnard, 1940). Therefore, the species is named as *Nerocila pigmentata* owing to its dark pigmentation of the sides of the body and uropods.

3. *Cymothoa cinerea* sp. n.

Family: Cymothoidae.

Genus: *Cymothoa* Fabricius.

Host: *Stromateus cinereus* (in the buccal cavity).

Date: September 1956.

Collection: Two females.

DESCRIPTION

Body stout oblong 44 mm. long and 19 mm. broad at 4th thoracic segment. Colour brown-yellow. Thoracic segments punctate. Abdominal segments not smooth.

Cephalon and its appendages: (Pl. II, Figs. 1 and 2).

Cephalon (Pl. II, Fig. 1 cph.) is large with its posterior margin straight. Laterally, the posterior angles are straightly curved into a rounded margin. The lateral margins of the cephalon are also straight but not parallel to each other: instead they slope anteriorly